Space Weather Forecast

Issued on Friday, 26 November 2021 at 00:35 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Weak CME arrival expected this weekend.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Very Low over the past 24 hours. There are currently two active regions on the visible disc; one a new and yet to be numbered region in the southwest quadrant, a weak, small and magnetically simple region. The only numbered region, AR2898 in the southeastern quadrant, is technically more complex magnetically, and is also larger, but is showing signs of slight decay and has not produced any significant flares.

No Earth-directed Coronal Mass Ejections (CMEs) were identified in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind was characteristic of the decaying influence of a fast regime, probably that emanating from a southern solar hemisphere 'coronal hole'. Solar wind speeds showed a decline through the period, starting 450-470 km/s, then ending the day near 400 km/s. Both the number of particles comprising the solar wind and their associated magnetic field were unremarkable and near background over the same period. Therefore geomagnetic activity was Quiet throughout.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Very Low, with 20% chance of C-class flares. No new significant regions are expected to rotate onto the visible disc until day 4, when a region may rotate onto the northeast limb.

Solar Wind / Geomagnetic Activity: A Coronal Mass Ejection from a filament (arc of plasma) eruption leaving the Sun 24/1300UTC may reach Earth late Saturday 27, possibly early Sunday 28 November. There is considered to be a Chance of Minor Geomagnetic Storm from this event, probably peaking within the UTC day of Sunday 28 November (Day 3).

Quiet geomagnetic activity is expected until the potential arrival of the CME, then increasing Unsettled to Active late Day 2 (27th) into early Day 3 (28th), with a Chance of Minor Geomagnetic storm intervals. From late Day 3 and into Day 4 Quiet to Unsettled geomagnetic activity is expected.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	10	30	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	1	1	1	1
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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